Health Update: Influenza

CAP Proficiency Testing Surveys

April 12, 2005

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Health Update
April 12, 2005

FROM: **JULIA M. ECKSTEIN**
DIRECTOR

SUBJECT: **2005 Proficiency Testing Surveys: VR1A-2005, VR4A-2005, and XLC-2005 (additional survey not included in 4.11.05 Health Alert)**

This is an update to the information distributed by the College of American Pathologists (CAP) to laboratories that received one of the following proficiency testing surveys: VR1A-2005, VR4A-2005 and XLC-2005. Each of these three different surveys contained one or more vials of influenza A/H2N2 virus. The National Microbial Laboratory Canada (NML) informed the World Health Organization (WHO) and the Centers for Disease Control and Prevention on March 26th that an influenza A/H2N2 virus had been identified in a local laboratory in Canada. However, subsequent investigation traced the source of the H2N2 virus to a proficiency testing survey (VR1A-2005) which the Canadian laboratory received from CAP in February 2005. In the fax from April 9, 2005, CAP asked all laboratories which participated in proficiency testing with one or more of these three CAP surveys to immediately destroy samples containing the H2N2 virus. **Viruses of the H2N2 subtype have not circulated since 1967 and persons born after 1968 will have no or only limited immunity against this subtype and therefore a growing segment of the human population may be susceptible to infection by H2N2 viruses. Thus, working with H2N2 viruses could theoretically pose a health risk to laboratory staff born after 1968.** A representative H2N2 virus is not contained in current trivalent influenza vaccines.

Therefore, out of an abundance of caution due to potential and theoretical risks currently associated with working with H2N2 viruses, CAP has recommended the following:

1. **<u>Immediately</u> autoclave, incinerate and treat as hazardous all materials you may have retained or derived from the following proficiency specimens:**
   a. **VR1-05 contained in survey panel VR1A-2005**
   b. **VR4-02 contained in survey panel VR4A-2005**
   c. **XV-04 and XV-05 contained in survey panel XLC-2005**

   in a manner consistent with CDC and FDA recommendations and OSHA blood borne pathogen rules
   (http://www.cdc.gov/od/ohs/biosfty/bmbl/bmbl-1.htm)
2. **Confirm within 24 hours of specimen destruction to the College of American Pathologists by e-mail or fax that the above mentioned proficiency specimens and all derivatives have been destroyed.**

3. **Monitor laboratory staff who have worked with 2005 survey proficiency specimens VR1-05, VR4-02, XV-04 and XV-05 for influenza-like illness (fever of >100°C and cough or sore throat) and follow up with laboratory testing to determine the etiology of infection. Influenza A infections that are detected in laboratory staff who have worked with these specimens should be reported immediately to national public health authorities and specimens should be retained for testing by national or international reference laboratories.**
4. **Immediately pass this information on to any laboratories to which you may have sent 2005 survey proficiency specimens VR1-05, VR4-02, XV-04 or XV-05 and report this action to the College of American Pathologists by e-mail or fax**.

As of today, there have been no reports of H2N2 infections among laboratory workers handling the H2N2 samples from CAP. Laboratory-associated infections have not been routinely documented in the literature, but informal accounts and published reports indicate that such infections have occurred in the past. These infections occurred when influenza viruses showing marked antigenic shift or antigenic drift were worked on in the laboratory under less stringent biosafety conditions than are recommended today and especially during work done in the past with experimentally or naturally infected animals. Biosafety Level 2 recommendations and OSHA requirements focus on the prevention of percutaneous and mucous membrane exposures to clinical material (http://www.cdc.gov/od/ohs/biosfty/bmbl4/bmbl4toc.htm). Biological safety cabinets must be used for the processing of clinical specimens when the nature of the test requested or other information suggests the likely presence of an agent readily transmissible by infectious aerosols (e.g., influenza viruses). The proper use of biological safety cabinets, along with use of recommended PPE, greatly reduces the chances of laboratory-acquired influenza infections. Given these recommendations it is expected that the likelihood of infection of a laboratorian is low if proper Biosafety Level 2 precautions are used. Up to the present time, Biosafety Level 2 containment has been recommended in most countries for use of human influenza isolates that are or have been in wide circulation in human populations (human influenza A/H1N1, H2N2 and H3N2 subtype viruses).

However, the CDC and NIH along with a panel of influenza experts are in the process of drafting changes to the *Biosafety in Microbiological and Biomedical Laboratories*, 4th Edition that may designate influenza viruses of the H2N2 subtype as Biosafety Level (BSL) 3 agents. This change is deemed prudent because of the length of time since this subtype circulated among humans and the consequent waning of immunity and corresponding increase in susceptibility of humans.

Future Viral Culture Surveys will contain only influenza A H1N1 or H3N2 strains deemed appropriate for Biosafety Containment Level 2 until a time when the circulation of influenza A virus subtypes changes.

If you have any questions, please contact the CAP Customer Contact Center at 1-800-323-4040, Option 1.